

Remarks

Claim 1 has been amended. Basis being found on page 1, lines 10-12; page 4, lines 30-31; page 5, lines 1-2 and 10-11; page 25, lines 1-14, page 26, lines 8-13 and elsewhere. Basis for new claims 301-303 can also be found in the previous citations and page 3, lines 2-18 and 19-24, Page 4, lines 25-29, Figure 1 and the Abstract. No new matter is presented. Additionally, a Declaration under 37 C.F.R. 1.132 by Christian E. Schafmeister, dated June 7, 2006, is attached and made a part of this amendment.

Rejection of Claims under 35 U.S.C. 103

The rejection of claims 1, 4-8 under 35 USC 103 as being obvious over Valli still stands. Applicant again submits that the compound recited in Claim 1 always contains a mono-carboxylic acid at the 2-position and an ester at the 4-position. It was synthesized using a temporary protecting group on the 2-carboxylate (here a tert-butyl ester) that was selectively removed with acid. Such selective removal of a particular ester is not possible using the compounds disclosed in Valli et al. because they contain identical esters. Thus, it would not have been obvious to a person skilled in the art to synthesize the compound of Claim 1 in view of Valli et al. The compound recited in Claim 1 would be an unexpected result to a person skilled in the art given the compounds disclosed in Valli et al. and their identical esters. Therefore, Claim 1 is not obvious in view of Valli et al., and the 35 USC 103 rejection is traversed with respect to Claim 1.

The 35 USC 103 rejection is also traversed with respect to dependent Claims 4-8 for the same reasons expressed hereinabove with respect to independent Claim 1. Because the compounds recited in Claims 4-8 always contain a mono-acid at the 2-position and an ester at the 4-position, these compounds would be non-obvious to a person skilled in the art given the compounds disclosed in Valli et al.

Additionally, the amended Claims 1, 4-8 and new Claims 301-303 now contain amended language regarding linking through rigid diketopiperazine rings to create spiro ladder oligomers which provide important limitations that cannot be ignored.

New Ground of Rejection – 35 U.S.C. 103

Claims 1, 4-8 are rejected under 35 U.S.C. 103 as being unpatentable over U.S. 5,473,077 and WO9605828, James Monn et al. The building blocks of amended Claims 1,

4-8 and new Claims 301-303 have each of the amines on the building blocks protected with an amino-protecting group. The structure of the building blocks allow assembly of the building blocks to create nanoscale spiro-ladder oligomers for biomimetic and nanotechnology applications using a complex scheme. This scheme is shown in paragraph 12 of the attached Christian E. Schafmeister Declaration.

Applicant submit that one skilled in the art would recognize that U.S. 5,473,077 or WO9605828 (both hereinafter "Monn et al."), and also Valli teach the use of their compounds as drugs, specifically as metabotropic glutamate receptor antagonists and they teach the formulation of their compounds into pharmaceutical compositions containing excipients and the formulation into tablets, pills, powders, lozenges, sachets, cachets, elixirs, suspensions, emulsions, solutions, syrup, aerosols, and ointments for human consumption. Neither Monn et al. nor Valli describes the linking together of their compounds to create nanoscale structures for any use, for example, biomimetic and nanotechnology applications. Because the intended application of the Monn et al. and Valli compounds are as drugs for "use in treating or preventing a physiological condition associated with an inappropriate stimulation of a glutamate receptor in a mammal" (see claim 7, pg 94 WO9605828), one skilled in the art would recognize that they only need compounds that will, in their active form within the body, have two free carboxylic acids as required for binding to the glutamate receptor.

Additionally, as the attached Christian E. Schafmeister Declaration points out in paragraph 13, the functional language inserted into amended Claim 1 and new Claims 301-303 direct the claims to areas not believed contemplated by the Monn et al. references. Claim 1 recites building blocks that can be linked together through formation of rigid rings to create spiro-ladder oligomers containing at least two bis-amino acids.

Additionally, new Claim 301 adds to Claim 1 that the spiro-ladder oligomer contains no freely rotating bonds. New Claim 301 would certainly not be contemplated by Valli et al. or the Monn et al. references, whether they are taken alone or combined. New Claim 302 adds to Claim 1 language that the building blocks are linked together and can be folded to create molecular host cavities. New Claim 302 would certainly not be contemplated by Valli et al. or the Monn et al. references, whether they are taken alone or combined. The same is true with new Claim 303, which add to Claim 1 that the compound can be coupled to create bis-peptides that can be assembled into discrete shapes.

Applicant respectfully submits that neither Valli et al., Monn et al. U.S. 5,473,077, nor Monn et al. WO9605828, taken either alone or in combination, teach or make obvious to one skilled in the art at the time the invention was made, the invention of amended claims 1, 4-8 and new claims 301-303. Applicant also points to paragraph 15 of the attached Declaration.

Summary

In review of the preceding amendments to and arguments, applicant respectfully submits that pending Claims 1, 4-8 and new claims 301-303 are in condition for allowance and requests consideration and allowance of these claims. If the Examiner has any suggested language or other suggestions forwarding prosecution of the case toward allowance, the Examiner is urged to contact applicant's attorney.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Daniel P. Cillo". The signature is written in a cursive, flowing style with a large loop at the beginning.

Daniel P. Cillo
Registration No. 25,108

Telephone Number:
(412) 566.5903